

CLAIMS

What is claimed is:

1. A system for managing, visualizing, and analyzing geospatial data across a computer network, said system comprising:

a plurality of processing servers integrated with one another for providing at least one data set by distributed processing, said at least one data set comprising a plurality of data set values; and

a client computer connectable to said plurality of processing servers for transmitting a query request to said plurality of processing servers, for receiving and storing said at least one data set from at least one of said plurality of processing servers, for rendering an image from said at least one data set, and for manipulating said data set values of said at least one data set.

2. The system of claim 1, wherein said query request comprises a request to view a geospatial feature and said image comprises said geospatial feature.

3. The system of claim 1, wherein said client computer is further for manipulating said values of said at least one data set.

4. The system of claim 3, wherein said image comprises superimposed multiple layers of subimages.

5. The system of claim 4, wherein each of said subimages rendered from one of said plurality of data sets.

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6. The system of claim 1, wherein said at least one data set comprises a plurality of data sets and said image rendered from said plurality of data sets.
7. The system of claim 6, wherein said plurality of data sets are stored on a respective one of said processing servers.
8. The system of claim 1, wherein said client computer adapted to manipulate said data set values of said data set stored on said client computer to generate modified data set values.
9. The system of claim 8, wherein said image is rendered from said modified data set.
10. The system of claim 8, wherein client computer communicates with at least one of said plurality of processing servers such that said plurality of processing servers integrated with one another provide at least said modified data set.
11. The system of claim 1, wherein each said plurality of servers executes a respective server application, and the server applications executed by said servers being integrated with one another so as to provide said at least one data set.
12. The system of claim 11, wherein said plurality of servers comprises:
 - a host server connectable to said client computer and at least one other of said server of said plurality of servers;
 - a raster image server for retrieving and sending referenced graphic features to said host server;

a database server for maintaining a relational database, said database storing spatial data and tabular data;

a geospatial metadata server operatively connected to said database server for providing data mining of said database;

a map query server for receiving a spatial operation request from said client computer and for generating a map query request to said database server, thereby said database server returning unique identifiers for all features in said spatial operation request; and

a vector map server.

13. The system of claim 1, wherein said at least one data set comprises spatial data and attribute data.

14. A method of managing, visualizing, and analyzing geospatial data across a computer network, said method comprising:

transmitting a query request from a client computer to one of a plurality of processing servers integrated with one another;

using distributed processing to provide at least one data set comprising a plurality of data set values from at least one of the plurality of servers;

sending the at least one data set to the client computer; and

using the client computer to render an image from the at least one data set.

15. The method of claim 14, wherein the query request comprises a request to view a geospatial feature and the image comprises the geospatial feature.

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16. The method of claim 14, wherein the at least one data set comprises a plurality of data sets and the image is rendered from the plurality of data sets.
17. The method of claim 16, said rendering the image comprises superimposed multiple layers of subimages.
18. The method of claim 17, wherein each of the subimages are rendered from one of the plurality of data sets.
19. The method of claim 14, further comprising:
 - storing the at least one data set by the client computer; and
 - manipulating the data set values of said at least one data set to generate modified data set values.
20. The method of claim 19, said rendering the image comprises rendering the image from said modified data set.
21. The method of claim 19, further comprising:
 - updating the data set values such that the plurality of servers will provide the modified data set values, if the query request is made again, by the client computer interacting with the plurality of server computers.
22. The method of claim 14, further comprising:
 - executing a respective server application on each of the plurality of servers; and
 - wherein the server applications are integrated with one another for said providing the at least one data set.

23. The method of claim 22, wherein providing at least one data set comprising a respective plurality of data set values by the plurality of servers comprises:

maintaining and storing spatial data and tabular data in a relational database on a database server.

24. The method of claim 22, wherein providing at least one data set comprising a respective plurality of data set values by the plurality of servers comprises:

retrieving and sending referenced graphic features to a host server from a raster image server.

25. The method of claim 22, wherein providing at least one data set comprising a respective plurality of data set values by the plurality of servers comprises:

extracting data from the relational database using a geospatial metadata server, the geospatial metadata server accesses and provides queries to the database server.

26. The method of claim 22, wherein providing at least one data set comprising a respective plurality of data set values by the plurality of servers comprises:

sending a spatial operation request by the client computer;
receiving a spatial operation request sent by a map query server;
generating a map query request by the map query server;
transmitting the map query request to the database server; and
returning unique identifiers by the database server for all features in the spatial operation request.

27. The method of claim 22, wherein providing at least one data set comprising a respective plurality of data set values by the plurality of servers comprises:

maintaining and storing spatial data and tabular data in a relational database on a database server;

retrieving and sending referenced graphic features to a host server from a raster image server;

extracting data from the relational database using a geospatial metadata server, the geospatial metadata server accessing and providing queries to the database server;

sending a spatial operation request by the client computer;

receiving a spatial operation request sent by a map query server;

generating a map query request by the map query server;

transmitting the map query request to the database server; and

returning unique identifiers by the database server for all features in the spatial operation request.

28. The method of claim 14, wherein the at least one data set comprises spatial data and attribute data.

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